

coupling a chuck to a rotatable pedestal, the pedestal comprising a central bore having a central hollow shaft disposed therein, the chuck and the pedestal cooperating to define a coolant chamber in fluid communication with the hollow shaft, the hollow shaft capable of the one-way communication of a gaseous coolant to the coolant chamber;

coupling the wafer to the chuck;

rotating the pedestal so as to rotate the coupled wafer; and

plasma etching the rotating wafer while cooling the chuck by communicating the gaseous coolant through the hollow shaft to the coolant chamber.

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cont

26. (Twice amended) A method of plasma etching a wafer by means of a plasma etching machine comprising a process chamber, a rotatable, internally cooled chuck disposed in the process chamber, a clamp coupled to the chuck; a controller coupled to the process chamber and chuck for controlling gas flow and pressure in the process chamber and rotation of the chuck, a pedestal coupled to the chuck and cooperating therewith to define a coolant chamber, the pedestal including a central coolant passage in fluid communication with a gaseous coolant source and the coolant chamber, the coolant passage capable of the one-way communication of a gaseous coolant to the coolant chamber; and a lift actuator coupled to the coolant passage, the coolant passage moving in the pedestal in response to actuation of the lift mechanism to lift the wafer from the chuck, said method comprising the steps of:

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